

Comparing amino acid abundances and distributions across carbonaceous chondrite groups

Aaron S. Burton, Michael P. Callahan, Daniel P. Glavin, Jamie E. Elsila and Jason P. Dworkin

Meteorites are grouped according to bulk properties such as chemical composition and mineralogy. These parameters can vary significantly among the different carbonaceous chondrite groups (CI, CM, CO, CR, CH, CB, CV and CK). We have determined the amino acid abundances of more than 30 primary amino acids in meteorites from each of the eight groups, revealing several interesting trends. There are noticeable differences in the structural diversity and overall abundances of amino acids between meteorites from the different chondrite groups. Because meteorites may have been an important source of amino acids to the prebiotic Earth and these organic compounds are essential for life as we know it, the observed variations of these molecules may have been important for the origins of life.

Submitted to the 39th COSPAR Meeting, Mysore, India in July 2012.